



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,402	03/31/2004	Naomi O. Limcangco	110578-135677	9598
31817	7590	06/27/2006	EXAMINER	
SCHWABE, WILLIAMSON & WYATT PACWEST CENTER, SUITE 1900 1211 S.W. FIFTH AVE. PORTLAND, OR 97204				ROJAS, BERNARD
		ART UNIT		PAPER NUMBER
		2832		

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/816,402	LIMCANGCO, NAOMI O.
	Examiner	Art Unit
	Bernard Rojas	2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 07 April 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-10 and 18-30 is/are pending in the application.
- 4a) Of the above claim(s) 25-30 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-10 and 18-24 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 04/07/2006 have been fully considered but they are not persuasive. Applicant states that the Drawing Objections are incorrect because Figure 7 illustrates the missing matter. On 10/14/2005, Applicant elected Embodiment 1: Figures 1-3, Claims 1-24 for prosecution. Figure 7 is not part of the elected Embodiment and Applicant failed to argue that Figure 7 is should be considered as part of elected Embodiment 1. Therefore, a bus, memory, a circuit, a processor, a network router, a wireless mobile phone and a personal digital are not shown in the elected Figures 1-3.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a bus, memory, a circuit, a processor, a network router, a wireless mobile phone and a personal digital assistant must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-7, 18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma [US 6,529,093] in view of Martin et al. [US 6,376,787].

Claims 1, Ma discloses an electromechanical switch [601] comprising; a signal contact [605]; an actuation electrode [603]; a beam [602] to electrically couple to the signal contact when an actuating voltage is applied to the actuation electrode; and a coating [dielectric material, figures 6A-6C] to at least facilitate the existence of an arc reduction environment.

Ma fails to teach using a metallic coating to at least facilitate the existence of an arc reduction environment.

Martin et al. teaches a Mem switch [100] with a metallic coating [130] and a dielectric coating [118] to at least facilitate the existence of an arc reduction environment.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the protective metallic layer of Martin et al. in the switch of Ma in order to help further protect the contact from damage by arcing by adding another protective metallic dielectric layer [col. 3 line 65 to col. 4 line 15].

Claim 4, Ma discloses that the coating is disposed between the beam and at least one of a group consisting of the signal contact and the actuation electrode [figures 6A-6C].

Claim 5, Ma discloses that the coating is applied to at least one of a group consisting of the actuation electrode, the signal contact, a first portion of the beam corresponding to the actuation electrode, and a second portion of the beam corresponding to the signal contact.

Claim 6, Ma discloses that the signal contact, the actuation electrode, and the beam are comprised of respective materials having respective coefficients of secondary electron emissions, and the coating is comprised of a material having a coefficient of secondary electron emission approximately lower than the coefficients of secondary electron emissions of the material over which it is applied [col. 4 line 35 to col. 5 line 15].

Claim 7, Martin et al. discloses that the metallic coating includes titanium [col. 3 line 65 to col. 4 line 7].

Claims 1, 4-7, 18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urano et al. [US 2004/0063325] in view of Ma [US 6,529,093], and in further view of Martin et al. [US 6,376,787].

Claim 18, Urano et al. discloses a system comprising a bus [6]; a memory [3] coupled to the bus; and a circuit [2] coupled to the bus, the circuit including a Mems unit [20].

Urano et al. fails to teach the claimed Mems structure.

Ma discloses an electromechanical switch [601] comprising; a signal contact [605]; an actuation electrode [603]; a beam [602] to electrically couple to the signal contact when an actuating voltage is applied to the actuation electrode; and a coating [dielectric material, figures 6A-6C] to at least facilitate the existence of an arc reduction environment.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Mems structure of Ma in the system of Urano et al. in order to provide a Mem switch that facilitates arcing so as to not short out the system.

Ma fails to teach using a metallic coating to at least facilitate the existence of an arc reduction environment.

Martin et al. teaches a Mem switch [100] with a metallic coating [130] and a dielectric coating [118] to at least facilitate the existence of an arc reduction environment.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the protective metallic layer of Martin et al. in the switch of Ma in order to help further protect the contact from damage by arcing by adding another protective metallic dielectric layer [col. 3 line 65 to col. 4 line 15].

Claim 20, Ma discloses that the coating is applied to at least one of a group consisting of the actuation electrode, the signal contact, a first portion of the beam corresponding to the actuation electrode, and a second portion of the beam corresponding to the signal contact.

Claim 21, Ma discloses that the signal contact, the actuation electrode, and the beam are comprised of respective materials having respective coefficients of secondary electron emissions, and the coating is comprised of a material having a coefficient of secondary electron emission approximately lower than the coefficients of secondary electron emissions of the material over which it is applied [col. 4 line 35 to col. 5 line 15].

Claim 22, Martin et al. discloses that the metallic coating includes titanium [col. 3 line 65 to col. 4 line 7].

Claim 23, Urano et al discloses the system of claim 18, wherein the circuit further includes a processor [4 or 26].

Claim 24, Urano et al. discloses the Mems device disclosed can be used in communications applications [i.e. network router or mobile phone, paragraph 0001].

Claims 1 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirakawa [US 6,115,231] in view of Martin et al [US 6,376,787].

Claim 1, Shirakawa discloses an electromechanical switch [figure 2] comprising; a signal contact [5]; an actuation electrode [4]; a beam [10] to electrically couple to the signal contact when an actuating voltage is applied to the actuation electrode [figure 4]; and a coating [dielectric material, 21] to at least facilitate the existence of an arc reduction environment.

Shirakawa fails to teach using a metallic coating to at least facilitate the existence of an arc reduction environment.

Martin et al. teaches a Mem switch [100] with a metallic coating [130] and a dielectric coating [118] to at least facilitate the existence of an arc reduction environment.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the protective metallic layer of Martin et al. in the switch of Shirakawa in order to help further protect the contact from damage by arcing by adding another protective metallic dielectric layer [col. 3 line 65 to col. 4 line 15].

Claim 8, Shirakawa discloses a protuberance [22] disposed on a portion of the beam corresponding to the signal contact [figure 2]

Claims 1 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong [US 20040031670] in view of Martin et al [US 6,376,787].

Claim 1, Wong discloses an electromechanical switch [figure 1] comprising; a signal contact [170]; an actuation electrode [160]; a beam [130] to electrically couple to the signal contact when an actuating voltage is applied to the actuation electrode; and a

Art Unit: 2832

coating [dielectric material, 180] to at least facilitate the existence of an arc reduction environment.

Wong fails to teach using a metallic coating to at least facilitate the existence of an arc reduction environment.

Martin et al. teaches a Mem switch [100] with a metallic coating [130] and a dielectric coating [118] to at least facilitate the existence of an arc reduction environment.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the protective metallic layer of Martin et al. in the switch of Wong in order to help further protect the contact from damage by arcing by adding another protective metallic dielectric layer [col. 3 line 65 to col. 4 line 15].

Claim 8, Wong discloses a protuberance [150] disposed on a portion of the beam corresponding to the signal contact [figure 1]

Claim 9, Wong discloses that at least a portion of the coating is applied to the protuberance [paragraph 14].

Claim 10, Wong discloses that at least a portion of the coating comprises the protuberance [paragraph 14].

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ma [US 6,529,093] in view of Martin et al [US 6,376,787] as applied to claim 1 above, in further view of Tourino et al. [US 6,809,412].

Claim 2, Ma in view of Martin et al. discloses the claimed invention with the exception of enclosing the switch in a housing.

Tourino et al. teaches surrounding a mems device [20] in a protective enclosure created by a cap [28] coupled [by 30] to a substrate [10] to substantially enclose the signal contact, the actuation electrode, the beam [figure 6].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to enclose the switch of Ma in a protective housing as taught by Tourino et al. in order to create a protective covering [abs] to protect against foreign objects such as dirt and dust from disrupting the operation of the switch.

Claims 3 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma [US 6,529,093] in view of Martin et al [US 6,376,787] as applied to claim 1 above, in further view of Wyse et al. [US 6,663,424].

Claims 3 and 19, Ma in view of Martin et al. discloses the claimed invention with the exception of dielectric coating being a hydride.

Wyse et al. teaches that a hydride can be used as a dielectric coating [col. 3 lines 12-15].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a hydride as the dielectric material in the switch of Ma, since it was known in the art as a dielectric material as taught by Wyse et al.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Rojas whose telephone number is (571) 272-1998. The examiner can normally be reached on M-F 8-4:00), every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2832

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bernard Ryan
Br

Elvin Enad
ELVIN ENAD
SUPERVISORY PATENT EXAMINER

6/23/06